

medial line punctiform followed by some small clusters of pale cinnamon scales; an incomplete dentate subterminal white line, preceded by clusters of black scales from costa to vein 5, and on inner margin; some fainter black clusters follow this line. Hind wing: traces of subbasal, antemedial and medial wavy lines, the latter preceded by a black point on discocellular, and followed by pale cinnamon shading; a faint subterminal whitish line with dark clusters of scales from costa to below vein 6. Fore wing below tiller buff, almost entirely suffused with hair brown; a pale shade beyond cell and before postmedial which is formed by short dark streaks on veins; some pale mottling on termen. Hind wing below tiller buff with only a few hair brown irrorations; a small antemedial spot on costa, and one on discocellular; traces of dark subterminal shading from costa to below vein 6.

Expanse 17 mm.

Habitat.—Alto da Serra, São Paulo, Brazil.

Type.—Cat. No. 33210, U. S. N. M.

In appearance like *P. enana* Dogn., which is a true *Physocleora* with upturned palpi.

Cambogia paulona, new species.

Male.—Body pale orange yellow; frons salmon buff; abdomen with segmental tawny lines. Wings pale orange yellow; fore wing crossed by eight russet vinaceous lines, partly macular and irrorated with silver scales, the lines almost evenly spaced; a terminal punctiform line. Hind wings crossed by six lines.

Expanse 16 mm.

Habitat.—São Paulo, Brazil.

Type.—Cat. No. 33211, U. S. N. M.

Is nearest to *C. anguinata* Warr. but paler, the lines much finer.

A NEW GENUS AND FIVE NEW SPECIES OF SYRPHIDAE FROM AUSTRALIA (DIPTERA).

BY RAYMOND C. SHANNON, *U. S. Bureau of Entomology.*

In a small collection of Australian Syrphidae, some contained in the National Museum Collection and some borrowed from the British Museum through the courtesy of Major E. E. Austen and F. W. Edwards, the writer found one genus and several species new to science. Descriptions of these new forms are given below. Two other genera new to Australia are also represented in the collection, and re-descriptions of these are likewise given.

Genus **PSILOTA** Meigen.

Two species of *Psilota* are at hand (British Museum Collection) one of which was previously described by G. F. Hill as *Psilota cyanea*. This name is preoccupied, as has been pointed out by Curran (*P. cyanea* Brunetti, India) who substituted

the name *victoria* in its stead. This species is easily recognized by its shining blue color and the apical projections on the lower, inner side of the hind femur and the small basal projection on the hind tibia.

The second species is very easily distinguished from the first by its darker color and simple hind legs. Two other species have been described from Australia, *femoralis* Schiner and *viridis* Macquart, while *coerulea* Macquart was described from Tasmania. The present species is nearly black, thereby differing in color from the above three, and the simple hind leg with very slightly swollen femur further distinguishes it from *femoralis* and *coerulea*. The hind femur is not mentioned in the description of *viridis*. However, this species is stated to be greenish blue.

***Psilota nigra*, new species.**

Female.—Frons of moderate width, entirely shining black (without silvery pollen) short, pale pilose; eyes short pilose; antenna moderate, dark brown; face shining black, epistoma moderately projecting; scutellum but little broader than long; femora very dark brown, tibiae and tarsi somewhat lighter; hind femur very slightly swollen, an inconspicuous keel on lower side, otherwise simple; hind tibiae simple; abdomen bluish black. Length 5.5 mm. Wing 5 mm.

Type locality.—South Australia.

Type.—In British Museum.

Genus **GRAPTOMYZA** Wiedemann.

Graptomyza Wiedemann, Nova Dipt. Gen., 1820, p. 16.

Genotype.—*G. ventralis* Wiedemann.

The occurrence of this genus in Australia is of unusual interest as it is the first record for the subfamily Volucellinae in the antipodes. The genus may be readily recognized by the presence of distinct thoracic bristles; face downwardly produced and pilose; discal crossvein placed well before the middle of the discal cell; the apical (i. e. the distal portion) and the posterior crossvein rectangular; and the flattened area on the disc of the scutellum.

***Graptomyza antipoda*, new species.**

A rather small, yellowish species marked with a distinct black "W" on the mesonotum and black abdominal spots.

Female.—Inner eye margins straight, from the vertex to the lowermost point; subquadrate, a little broader than long, black across vertex, yellow on lower two-thirds; antennae yellow, apical upper corner of third joint darkened; third joint large, three times as long as broad; arista pectinate, the rays only on the

basal two-thirds of upper side; face yellow, a darkened median stripe, tubercle merely suggested; epistoma moderately produced; thorax entirely yellow save for a well formed black mark in the form of a "W" on posterior half of mesonotum; thorax with nine pairs of well-developed black bristles arranged on each side as follows: Two on notopleura, one supraalar; three postalar; a pair on hind margin of mesonotum; a pair on apex of scutellum; one mesopleura; femora yellow, tibiae and tarsi brownish; hind tibia with a patch of short black bristles on outer side near the middle; abdomen rather broadly rounded, yellow, tergites two, three and four with a pair of black spots on the apical corners and each of these tergites faintly marked with brown in the middle; wings hyaline; squamae white, halteres yellow. Length 5 mm.; wing 4.5 mm.

Type locality.—Cairns, New Queensland (taken on window, J. F. Illingsworth).

Type.—Cat. No. 28786, U. S. N. M.

***Eumerus superbus*, new species.**

Three specimens, received through the Federal Horticultural Board, are at hand representing a most unusually marked species of *Eumerus*. The specimens were reared from a *Macrozamia* cone, shipped from Australia. They are not in very good condition, the antennae are lost in all three specimens, but because it is such an exceptionally well marked species, it can be easily recognized.

A fairly large species with frontal and scutellar tufts of stiff black hairs and wings spotted very similar to those of the Ortalidae.

Male and female.—Front nearly as broad in the male as in the female; ocellar region very large, equalling half the length of the front, inflated, shining bluish black and bearing a patch of stiff erect black hairs; ocelli well advanced of the hind occipital margin, the anterior ocellus much farther removed from the other two than they are from each other; a narrow brownish pollinose cross band below ocellar region which is followed by a large opaque black region clothed with black and golden hairs; between this region and the antennae is a yellow brown cross band clothed with pale yellow hairs; first two antennal joints of normal size, silvery pollinose and pilose; upper half of face yellowish, covered with silvery pollen, whitish pilose, lower half darkened, with yellowish hairs medianly and black hairs on the sides; mesonotum velvety black with a silvery pollinose pattern, black pilose, the notopleurae and hind margin golden pilose; scutellum black with a large tuft of dense, stiff, and erect black hairs; fore and mid femora black, fore and mid tibiae black, yellowish basally and apically; fore tarsus yellow; mid tarsi yellow with conspicuous silvery white pile; hind femur greatly enlarged, shining black, yellow apically, with a row of rather widely set black spines on lower margin, hind tibia greatly thickened, in the male with silvery white pile; hind tarsus reddish yellow, in the male with dense, flattened silvery white pile; abdomen variegated with silvery pollen and pile, and yellow and black pile; wings hyaline on basal half; stigma

bright yellow; apical half of wing mottled with dark splotches and spots; third vein nearly straight; squamae and halteres whitish, plumula black.

Length 11 mm.; wing 7 mm.

One male, two females, each with puparium.

Type locality.—Australia (reared from a *Macrozamia* cone received through the Federal Horticultural Board, 1925).

Type (male), *allotype* (female), and *paratype* (female).—Cat. No. 28787, U. S. N. M.

Genus **MICRODON** Meigen.

Microdon Meigen, in Illig. Magaz. f. Ins., vol. 2, 1803, p. 83.

Genotype.—*Microdon mutabilis* (Linnaeus).

Seven names have been proposed for the species of *Microdon* of Australia but only three species are recognized by Hardy in his paper. Two species described by Knab and Malloch, the types in the U. S. National Museum, *Microdon brachycerus* and *M. daveyi*, have been placed as synonyms of *vittatus* and *variegata* respectively. The latter species, however, proves to be quite distinct from *variegata*.

Microdon daveyi Knab and Malloch.

Microdon daveyi Knab and Malloch, Trans. Roy. Soc. S. Austr., vol. 36, 1912, p. 233.

This species is smaller than *variegata*, the abdomen is much more predominantly black and shorter and the appendix on the third vein occurs at the middle of the discal cell, while in *variegata* it is beyond the middle.

An additional species, new, has recently come to hand, and is here described.

Microdon iridomyrmex, new species.

A small blackish species with the legs largely reddish brown, which was reared from the nest of *Iridomyrmex rufo-niger* Lowne by Mr. J. Clark.

Female.—Nearest related to *Microdon vittatus* Macquart but distinct in a number of respects. The front is very broad, the eye correspondingly smaller, the latter noticeably the smaller in area and subquadrate; pile on the front black, that on the lower half appressed and directed upwards; antennae black, rather short and stout; first joint fairly long, the second short, the third longer than combined length of first and second; arista unusually short and stout, shorter than length of third joint; face black, equal in width to the front, pale pilose; femora reddish yellow with black bases; tibiae reddish yellow basally, darkening beyond; tarsi black; wings hyaline; third vein without appendix; thorax black, largely black pilose; abdomen black, black and pale pile intermixed; halteres and squamae white. Length 9 mm.; wing 5.5 mm.

Two females.

Type locality.—Beverly, W. Australia (J. Clark).

Type.—In British Museum.

Each specimen has a puparium mounted with it. A specimen of *M. vittatus* likewise has a puparium, and this shows marked differences from that of *iridomyrmex*. The latter has four longitudinal straight rows of rather large granulose spots. The puparium of *vittatus* is distinctly broader and has eight rows of irregularly placed and much smaller granulose spots.

MALOMETASTERNUM, new genus.

The species for which this genus is erected probably is very closely related to the Australian species placed in the genus *Criorhina* and also to Walker's genus and species *Deineches nigrofulva*. The head and venation in all of these species is very similar to the *Criorhina* type, but the pilosity of the body is not woolly as in *Criorhina* and therefore should not be considered under that genus. The writer would suggest that *nudi-ventris* Macquart and *spadix* Hardy belong to *Deineches*.

The present species is apparently quite distinct from the above named species in that it possesses on the hind femur a distinct preapical saw-tooth projection and a pair of scutellar tubercles which are not mentioned in the descriptions of the others.

Generic diagnosis.—Based on the male. Eyes holoptic; arista with dorsal basal arista; face projecting downwards, concave between antennae and the prominent facial tubercle; thorax inconspicuously pilose; scutellum three times as broad as long with a pair of widely spaced dorsal tubercles; hind metasternum and hind coxae with long, white and woolly pile; hind coxae greatly enlarged; hind femur greatly enlarged with a prominent preapical and ventral saw-tooth projection (similar to that in *Tropidia*); discal crossvein joining discal cell well beyond its middle; and apical crossvein with a somewhat rounded basal angle, nearly in line with posterior crossvein.

Malometasternum scutellaris, new species.

Male.—A rather large species; ocellar triangle elongate, white pollinose frontal triangle rather small, white pollinose; face entirely white pollinose in front, the jowls shining black; femora and tibiae brownish, hind tibia more yellow; fore and mid tarsi whitish, hind tarsi bright yellow; wings faintly infuscated; abdomen deep brown, apical half of fourth tergite bright reddish yellow.

Type locality.—Townsville, New Queensland (1909, F. P. Dodd).

Type.—In British Museum.

Dissoptera pollinosa Edwards.

Dissoptera pollinosa Edwards, Proc. Zool. Soc. Lond., vol. 20, 1916, p. 410.

This genus and species, originally recorded from New Guinea, is represented in the material at hand by a single female. At first glance the species resembles the genus *Syrphus*. However, it is a close ally of *Eristalis* but may be easily separated therefrom by the straight face, in profile, and yellow scale-like vestiture of the front and mesonotum, that on the face being tomentose. The abdomen has a pair of large (very large on the second) yellow spots at anterior corners of each tergite, fifth tergite entirely yellow.

Length 9 mm.; wing 7 mm.

Cairns, New Queensland (on window, J. F. Illingsworth).

NOTES ON INSECT INHABITANTS OF BIRD HOUSES.

By W. L. McATEE.

DESCRIPTIONS OF A NEW GENUS AND THREE NEW SPECIES OF DIPTERA.

By J. R. MALLOCH.

In an effort to increase the bird enemies of nut weevils at the experimental chestnut orchard of the Bureau of Plant Industry at Bell, Md., 47 bird boxes were erected there by the Biological Survey in April, 1926. These were inhabited by a variety of tenants of which insects were by no means the least interesting.

Ordinary paper wasps (*Polistes*) built nests in 24 of the bird houses but three of these nests were subsequently torn up by house wrens and in one case incorporated into the nest of the bird. One box was occupied by a colony of yellowjackets (*Vespula*) and one by bumble-bees (*Bremus*) the latter using the nest of an earlier interloper, a deer mouse (*Peromyscus*) in building their own. In these instances the occupants of the houses were either birds or insects, never both together. In another series of cases, however, namely, the boxes in which birds reared or attempted to rear broods, insect occupation was concurrent with that of the birds. The insects (and mites) concerned included parasites of the birds, and scavengers in the nest which themselves attracted other parasites and predators.

Information on the insect occupants of the scavenger and parasite classes is based entirely on laboratory examination of the contents of the bird boxes collected Sept. 23, 1926, probably a month subsequent to the time any of the houses were occupied by birds. Identifications in groups they specialize upon were kindly made by J. R. Malloch and L. L. Buchanan of the